CLAIMS

What is claimed is:

1. An engine control system for controlling transitions between activated and deactivated modes in a displacement on demand engine for a vehicle having a manual transmission, the control system comprising:

a clutch position sensor that generates a clutch position signal;

a shifter shaft position sensor that generates a shifter shaft position signal; and

a controller that transitions the engine from the activated mode to the deactivated mode when the clutch is in at least a partially disengaged position based on said clutch position sensor signal and when an upshift is about to occur based on said shifter shaft position sensor signal.

2. The engine control system of claim 1 further including an engine intake manifold sensor that generates an intake manifold vacuum signal, wherein said controller is operable to transition the engine from the activated mode to the deactivated mode when said intake manifold vacuum signal is greater than a predetermined value.

3 The engine control system of claim 2 further including an engine speed sensor that generates an engine speed signal, wherein the controller calculates said predetermined value based on said engine speed signal.

4. The engine control system of claim 1 wherein said shifter shaft position sensor includes a first measuring device coupled to said shifter shaft and a second measuring device coupled to said shifter

shaft, said first and second measuring devices being spaced apart from one another.

5. The engine control system of claim 4 wherein said first measuring device includes a retractable wire having a first end coupled to said shifter shaft, said first measuring device operable to output a signal corresponding to an extended length of said wire.

6. The engine control system of claim 1 wherein the engine includes a first throttle in communication with a first set of cylinders and a second throttle in communication with a second set of cylinders, wherein transitioning the engine from the activated mode to the deactivated mode includes closing said first throttle and opening said second throttle.

7. The engine control system of claim 6 wherein the engine includes an intake manifold having first and second passageways, said first passageway being separated from said second passageway and in communication with said first set of cylinders.

8. A method for controlling transitions between activated and deactivated modes in a displacement on demand engine for a vehicle having a manual transmission, the method comprising:

determining a clutch position;

determining a shifter shaft position;

determining if an upshift is about to occur; and

transitioning from the activated to the deactivated mode when the clutch is in at least a partially disengaged position and an upshift is about to occur.

9. The method of claim 8 wherein the step of determining a shifter shaft position includes determining a first distance between said shifter shaft and a first reference point and determining a second distance between said shifter shaft and a second reference point spaced apart from said first reference point.

10. The method of claim 9 wherein the step of determining a shifter shaft position includes correlating said first and second distances to a shift pattern of said shifter shaft.

11. The method of claim 10 wherein the step of determining a clutch position includes determining a distance between a moveable clutch member and a fixed reference point.

12. The method of claim 11 wherein said moveable clutch member includes a clutch fork.

13. The method of claim 8 wherein the step of determining if an upshift is about to occur includes comparing a previous location of said shifter shaft to a current position of said shifter shaft.

14. The method of claim 13 wherein the step of determining if an upshift is about to occur includes determining if said shifter shaft is being moved toward a higher gear position.

15. The method of claim 8 further including transitioning from the deactivated mode to the activated mode when the manifold vacuum is less than a predetermined value.

16. The method of claim 15 further including opening a first throttle and closing a second throttle to maintain a substantially constant torque output.

17. The method of claim 16 further including continuing to open the first throttle and close the second throttle until the throttle positions are substantially equal.

18. The method of claim 8 further including determining an intake manifold vacuum and allowing said transitioning step to occur if said intake manifold vacuum is greater than a predetermined limit.

19. The method of claim 18 further including opening a first throttle and closing a second throttle to maintain a substantially constant torque output.

20. The method of claim 19 further including continuing to close said second throttle and discontinue fuel supply to said second throttle.

21. The method of claim 8 further including determining an engine speed and allowing said transitioning step to occur if said engine speed is within a predefined range.